

1	<b>BINAURAL AND STEREOPHONIC</b>	59	.Loudspeaker operation
2	.Broadcast or multiplex stereo	60	.Testing of hearing aids
3	..FM final modulation	61	<b>SOUND EFFECTS</b>
4	...AM subcarrier	62	.Tremelo or vibrato effects
5	....Four discrete channels	63	.Reverberators
6	.....Having transmitter	64	..Mechanical (e.g., reverberation chamber)
7	....Switch-type detector or modulator	65	...Helical spring
8	.....Two diodes	66	<b>DEREVERBERATORS</b>
9	.....Four or more diodes	67	<b>STETHOSCOPES, ELECTRICAL</b>
10	....Channel separation control	312	<b>HEARING AIDS, ELECTRICAL</b>
11	....Automatic switchover between mono and stereo modes	313	.Directional
12	....Stereo indicators (e.g., stereo presence)	314	.Programming interface circuitry
13	....Antinoise	315	.Remote control, wireless, or alarm
14	....Having transmitter	316	.Frequency transposition
15	..AM or both AM and angle final modulation	317	.Noise compensation circuit
16	...Having transmitter	318	..Feedback suppression
17	.Pseudo stereophonic	319	.With vacuum tube amplifier
18	.Pseudo quadrasonic	320	.Spectral control
19	.Quadrasonic	321	.Wideband gain control
20	..Matrix	322	.Specified casing or housing
21	...4-2-4	323	..Power supply or programming interface terminals
22	....Variable decoder	324	..Component mounting
23	....With encoder	325	..Cerumen protection
23.1	.Hearing aid	326	..Non-air-conducted sound delivery
300	.Stereo speaker arrangement	327	..Spectacle
301	..In furniture or clothing	328	..Ear insert
302	..In vehicle	329	...Device for manipulation
303	..Optimization	330	..Hook over ear
304	...Enclosure orientation	331	..Inductive pickup
305	...Enclosure adaptation	70	<b>ARTIFICIAL LARYNX, ELECTRICAL</b>
306	..With image presentation means	71.1	<b>ACOUSTICAL NOISE OR SOUND CANCELLATION</b>
307	..Surround (i.e., front plus rear or side)	71.2	.Acoustic, nonairborne vibration sensing or counterwave emission
308	..In single baffle	71.3	.From appliance
309	..Stereo earphone	71.4	.Within cabin or compartment of vehicle
310	...Virtual positioning	71.5	.Within duct
311	...Wireless or for use in diverse	71.6	.Adjacent ear
26	.Stereo sound pickup device (microphone)	71.7	.Particular transducer or enclosure structure
27	.Center channel	71.8	.Counterwave generation control path
28	.Amplifier	71.9	..Nonacoustically derived reference signal
54	<b>HELIUM SPEECH</b>	71.11	..Adaptive filter topology
55	<b>AUDIO TRANSDUCER PROTECTION CIRCUITRY</b>	71.12	..Algorithm or formula (e.g., LMS, Filtered-X, etc.)
56	<b>MONITORING OF SOUND</b>		
57	.Amplification control responsive to ambient sound		
58	<b>MONITORING/MEASURING OF AUDIO DEVICES</b>		

71.13	..Analog or nonadaptive	100	..With active device
71.14	..Tonal noise or particular frequency or band	101	.Automatic tone control
72	<b>HEARING PROTECTORS, ELECTRICAL</b>	102	..With amplitude control
73.1	<b>SOUND OR NOISE MASKING</b>	103	.Having automatic equalizer circuit
74	<b>HEADPHONE CIRCUITS</b>	104	<b>INCLUDING AMPLITUDE OR VOLUME CONTROL</b>
75	<b>MEGAPHONES</b>	105	.Remote
76	<b>LECTERNS</b>	106	.With amplitude compression/expansion
77	<b>ONE-WAY AUDIO SIGNAL PROGRAM DISTRIBUTION</b>	107	.Automatic
78	.Drive-in	108	..Including feedback
79	.Near field	109	.With manual volume control
80	.Multiple channel	110	<b>VOICE CONTROLLED</b>
81	..With switching	111	<b>CIRCUITRY COMBINED WITH SPECIFIC TYPE MICROPHONE OR LOUDSPEAKER</b>
82	.Public address system	112	.With carbon microphone
83	..Feedback suppression	113	.With electrostatic microphone
84	..Spare amplifier substitution	114	.With piezoelectric microphone
85	..Speaker or channel switching	115	.With magnetic microphone
86	<b>VEHICLE</b>	116	.With electrostatic loudspeaker
87	<b>HAVING NON-ELECTRICAL FEATURE (E.G., MOUNTING)</b>	117	.With magnetic loudspeaker
89	.Loudspeakers driven in given phase relationship	118	<b>WITH MUSICAL INSTRUMENT</b>
332	.And loudspeaker	119	<b>WITH MIXER</b>
333	..With furniture, clothing, or image presentation means	120	<b>WITH AMPLIFIER</b>
334	..Portable or for use in diverse environment	121	.Feedback
335	..Plural diaphragms, compartments, or housings	122	<b>HAVING MICROPHONE SWITCHING</b>
336	..Curved or angled housing	123	<b>ELECTRO-ACOUSTIC AUDIO TRANSDUCER</b>
91	.Having microphone	150	.Body contact wave transfer (e.g., bone conduction earphone, larynx microphone)
92	<b>DIRECTIVE CIRCUITS FOR MICROPHONES</b>	151	.Driven diverse static structure (e.g., wall, sounding board)
93	<b>FEEDBACK SUPPRESSION</b>	337	.Having acoustic wave modifying structure
94.1	<b>NOISE OR DISTORTION SUPPRESSION</b>	338	..With tubular waveguide or resonant element
94.2	.Spectral adjustment	339	..Sound intensifying or spreading element
94.3	..In multiple frequency bands	340	...Horn
94.4	.Interpolation	341	....Inverted, folded, or curled
94.5	.Soft switching, muting, or noise gating	342	....Plural horns or diaphragms
94.6	.Hum or ground loop	343	....Phase plug
94.7	.Using signal channel and noise channel	344	...Mouthpiece
94.8	.Peak limiting or pulsive noise compensation	345	..Acoustic enclosure
94.9	.Feedforward circuitry for transducer compensation	346	...Acoustic resistance
95	<b>MICROPHONE FEEDBACK</b>	347	....On front side of diaphragm
96	<b>LOUDSPEAKER FEEDBACK</b>	348	....On rear side of diaphragm
97	<b>INCLUDING PHASE CONTROL</b>	349	...Bass reflex (e.g., rear wave)
98	<b>INCLUDING FREQUENCY CONTROL</b>	350	...Front wave
99	.Having crossover filter	351	...Plural chambers

352	...Having internal wave reflecting means	372	....Having mechanical or acoustic sound attenuation
353	...Acoustic damping or attenuating resonator	373	....Openable to ambient
354	..Absorbing or attenuating element	374	...Particular support structure
160	..Reflecting element	375	....And microphone
161	..With mechanical amplifier arrangement	376	....Headgear
162	..Detail of mechanical vibration coupling to transducer (e.g., tuned vibrating element)	377	....Plural bands
163	..Having bi-directional transducer	378	....Single band
164	..Thermal response to, or generation of, sound vibration	379	....adjustable
165	..By modifying fluid flow	380	....Ear insert or bone conduction
166	..Having a fluid as a conducting element	381	....Hook over ear or spectacle
167	..Ionized gap, spark, or flame	382	....Sound conducting tube
355	..Housed microphone	383	....Collapsible
356	..Directional	384	...Electrical hardware feature
357	...With plural sound ports (e.g., pressure gradient)	184	..Different types of diaphragms
358	....Plural or variable characteristics	185	..Having common voice coil
359	..Windscreen	186	..Plural diaphragms
360	..Cavity	385	..Having body supported structure other than on head
361	..Mounting or support	386	..Mounting or support feature of housed loudspeaker
362	...Boom (other than on headset)	387	..Directional, directible, or movable
363	...Stand or gooseneck	388	..With furniture, clothing, or image display
364	...On body or clothing	389	..In vehicle
365	...In electronic apparatus or vehicle	390	..Boom or support arm
366	...Detachable from support	391	..Grille
367	...In headgear	392	..Resilient
368	...On shock absorbing support	393	..electrical insulation feature
369	..Microphone capsule only	394	..Electrical hardware
170	..Compound	395	..Mechanical detail
171	..Micromagnetic	189	..Having protective or sheilding feature
172	..Light modifying	190	..Electrostrictive, magnetostrictive, or piezoelectric
173	..Piezoelectric or ferroelectric	191	..Having electrostatic element (e.g., electret, vibrating plate)
174	..Capacitive	396	..Electromagnetic (e.g., dyndynamic)
175	..Semiconductor junction microphone	397	..Cooling feature
176	..Conductive diaphragm (e.g., reed, ribbon)	398	..Having diaphragm support feature
177	..Dynamic (e.g., magnetic)	399	..Conductive diaphragm (e.g., ribbon)
178	..Vibrating electrical contract	400	..Movable voice coil
179	..Resistive	401	...Multiple voice coils
180	...Granular or carbon	402	....For different frequencies
181	....Differential	403	...Centering from outside bobbin or diaphragm
182	..Plural or compound reproducers	404	....Spider
370	..Headphone	405	...Centering from within bobbin or diaphragm
371	...Particular cup		

406 ...Field coil  
 407 ...Particular bobbin structure  
 408 ...Pattern  
 409 ...Wiring structure  
 410 ...Coil coating, winding layer structure, or wire  
 411 ...Including adjustment mechanism  
 412 ...Magnetic circuit  
 413 ...Having damping  
 414 ...Flux modifying means  
 415 ...Magnetic liquid  
 416 ...Inverted (e.g., within cone)  
 417 ...Armature diaphragm  
 418 ...Armature linked to diaphragm  
 419 ...Not having central magnetic portion  
 420 ...Having central magnetic portion  
 421 ....Plural magnets  
 422 .....Like poles adjacent  
 423 ...Specified diaphragm shape or structure  
 424 ...Plural portions or sections  
 425 ....Honeycomb  
 426 ...Critically defined material or lamination  
 427 ....Metal  
 428 ....Fibrous  
 429 ...Apertures in surface  
 430 ...Dome or round  
 431 ...Flat  
 432 ...Conical  
 433 ...Basket detail  
 124 **MISCELLANEOUS**

#### **FOREIGN ART COLLECTIONS**

##### **FOR 000 CLASS-RELATED FOREIGN DOCUMENTS**

Any foreign patents or non-patent literature from subclasses that have been reclassified have been transferred directly to FOR Collection listed below. These collections contain ONLY foreign patents or nonpatent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

FOR 100 **AUDIO BANDWIDTH COMPRESSION OR EXPANSION (381/29)**  
 FOR 101 .With content reduction encoding (381/30)  
 FOR 102 .Delay line (381/33)  
 FOR 103 **TIME COMPRESSION OR EXPANSION (E.G., RUN LENGTH CODING) (381/34)**  
 FOR 104 .With content reduction encoding (381/35)  
 FOR 105 **SPEECH ANALYSIS AND SYNTHESIS COMBINED (381/36)**  
 FOR 106 .Using frequency (381/37)  
 FOR 107 ..Pitch (381/38)  
 FOR 108 ..Formants (381/39)  
 FOR 109 .Using time (381/40)  
 FOR 110 **SPEECH ANALYSIS (E.G., PHONEME RECOGNITION) (381/41)**  
 FOR 111 .Voice recognition (381/42)  
 FOR 112 .Word recognition (381/43)  
 FOR 113 ..Phonetic typewriters (381/44)  
 FOR 114 ..Frequency domain (381/45)  
 FOR 115 .Detection of speech in noise (381/46)  
 FOR 116 .Signal to noise ratio enhancement (381/47)  
 FOR 117 .Speech parameter display (381/48)  
 FOR 118 .Speech pitch fundamental frequency (381/49)  
 FOR 119 .Speech formant frequencies (381/50)  
 FOR 120 **SPEECH SYNTHESIS (381/51)**  
 FOR 121 .Speech from printed matter (381/52)  
 FOR 122 .Vocal tract model (381/53)  
 FOR 123 **ACOUSTICAL NOISE OR SOUND CANCELLATION (381/71)**  
 FOR 124 **NOISE SUPPRESSION (381/94) BINAURAL AND STEREOPHONIC**  
 FOR 125 .Speaker arrangement (381/24)  
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 FOR 127 **HEARING AIDS, ELECTRICAL (381/68)**  
 FOR 128 .Directional (381/68.1)  
 FOR 129 .Frequency control (381/68.2)  
 FOR 130 .Bone conduction (381/68.3)  
 FOR 131 .Gain Control (381/68.3)  
 FOR 132 .Spectacle (381/68.5)  
 FOR 133 .Ear insert (381/68.6)  
 FOR 134 .Hook over ear (381/68.7)  
 FOR 135 .Specified casing or housing (381/69)  
 FOR 136 ..Having vacuum tube amplifier (381/69.1)

FOR 137 ..Having battery (381/69.2)  
FOR 138 ..Having enclosure or housing  
    (381/138)  
FOR 139 ..With loudspeaker (e.g., baffle,  
    spatial orientation, etc.)  
    (381/90)  
FOR 140 ..With acoustic wave modifying  
    structure (381/153)  
FOR 141 ..Including sound conducting tube  
    (381/154)  
FOR 142 ..Directional (381/155)  
FOR 143 ..Sound intensifying or spreading  
    element (381/156)  
FOR 144 ...Mouthpiece (381/157)  
FOR 145 ..Absorbing or attenuating  
    element (e.g., baffle,  
    obstruction, damping) (381/  
    158)  
FOR 146 ..Enclosure or resonant cavity  
    (381/159)  
FOR 147 ..Microphone (381/168)  
FOR 148 ..With mounting or support  
    feature (381/169)  
FOR 149 ..Headphone (381/183)  
FOR 150 ..Having body supported structure  
    (e.g., earphone) (381/187)  
FOR 151 ..With mounting or support feature  
    (381/188)  
FOR 152 ..Electromagnetic (e.g., dynamic)  
    (381/192)  
FOR 153 ..Having feature of edge-  
    supported diaphragm (381/193)  
FOR 154 ..Movable voice coil (381/194)  
FOR 155 ...Multiple (e.g., double) (381/  
    195)  
FOR 156 ...Pattern (381/196)  
FOR 157 ...Centering (381/197)  
FOR 158 ..Including adjustment mechanism  
    (381/198)  
FOR 159 ..Magnetic circuit or core  
    structure (381/199)  
FOR 160 ...Armature (381/200)  
FOR 161 ...Magnetic configuration (e.g.,  
    tubular or U-shaped) (381/201)  
FOR 162 ..Specified diaphragm shape or  
    structure (381/202)  
FOR 163 ...Flat (381/203)  
FOR 164 ...Conical (381/204)  
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    mounting or support (381/205)

